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## Patent

Attorney Docket: LYNN/0083

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**IN RE APPLICATION OF:**  
**Zoran Minevski, *et al.***

**SERIAL NO: 10/084,029**

**FILED: February 27, 2002**

**FOR: Electrochemical Method for Producing Ferrate (VI) Compounds**

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**EXAMINER: Phasge, Arun S.**

GROUP ART UNIT: 1753

**Via Facsimile: 703-872-9306**

**DECLARATION OF INVENTORS UNDER 37 C.F.R. § 1.131**

As a named inventor of pending U.S. Patent Application No. 10/084,029, filed on February 27, 2002, I declare the following:

1. That I am a joint inventor of the subject matter claimed in the above captioned application and that I am familiar with the disclosure and the pending claims;
2. That the disclosure and the pending claims of the above captioned application describe and define an invention that was conceived and reduced to practice prior to March 29, 2001;
3. That the acts relied upon to establish the dates of conception and reduction to practice prior to March 29, 2001 were carried out in the United States;
4. That the act relied upon to establish that the date of conception and the date of the reduction to practice was before March 29, 2001 are documented by *Patent Disclosure No. 103* attached as Exhibit 1, wherein it is disclosed that the invention provides a cell for production of potassium ferrate through electrochemical oxidation of iron to Fe(VI) as shown in FIG. 2 of Exhibit 1, showing a hydroxide solution in fluid communication between a sacrificial iron-containing anode and a cathode;
5. That page 9 of Exhibit 1 provides four examples of producing ferrates using an anode

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containing iron and a cathode in fluid communication with the anode in a cell circulating different electrolytes including NaOH, KOH and a combination thereof,

6. That pages 15 and 16 of Exhibit 1 show experimental results of the electrochemical production of ferrates using KOH, NaOH and a combination thereof as the electrolyte in the electrochemical cell as described above;

7. That while the copy of the *Patent Disclosure No. 103* presented in Exhibit 1 has been changed by deleting the dates, the document was produced prior to March 29, 2001.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
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First Inventor

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
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**EXHIBIT I**

TITLE

Project No. \_\_\_\_\_

Book No. \_\_\_\_\_

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From Page No. \_\_\_\_\_

Electrochemical Ferrite Protection

Conditions: 500 mL of 10M NaOH, 10M KOH solution  
 bare reaction with no membrane separation  
 ~ 50g 1006 steel wire as anode ( $SA \approx 152.7 \text{ cm}^2$ )  
 1010 steel plate as cathode  
 Controlled Current: 2.0 Amps  
 Controlled Temperature: 45-50°C

	Time (min)	Temperature (°C)	Current (Amps)	Voltage (V)	dilution	Asos	Concentration (mM)
1	0	37°	18.1	3.5	—	—	—
2	5	44°	20.0	4.3	1/20	0.100	1.869
3	10	48°	20.0	4.4	1/20	0.216	4.032
4	15	48°	20.0	4.4	1/20	0.298	5.383
5	20	48°	20.0	4.5	1/20	0.408	7.626
6	25	48°	20.0	4.5	1/20	0.486	9.089
7	30	47°	20.0	4.5	1/20	0.590	11.028
8	35	47°	20.0	4.6	1/20	0.678	12.673
9	40	47°	20.0	4.6	1/20	0.810	15.140
10	45	47°	20.0	4.6	1/20	0.878	16.411
11	50	47°	20.0	4.6	1/20	0.947	17.791
12	55	47°	20.0	4.6	1/20	1.015	18.972
13	60	47°	20.0	4.6	1/20	1.142	21.376
14	70	48°	20.0	4.6	1/20	1.261	23.570
15	80	48°	20.0	4.7	1/20	1.478	26.692
16	90	48°	20.0	4.7	1/20	1.585	29.626
					after collection and mixing 1/20	1.592	29.757

To Page No. \_\_\_\_\_

Witnessed &amp; Understood by me, \_\_\_\_\_

Date \_\_\_\_\_

Invented by \_\_\_\_\_

Date \_\_\_\_\_

Recorded by \_\_\_\_\_

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